

ABSTRACT

A ceramic micro-glow plug made from three primary constituents, silicon, carbon and nitrogen by forming a precursor liquid polymer in a mold or by photolithography, drying, pyrolyzing and annealing. A U-shaped design with two arms joined at thin tip, and the composition of the silicon carbon-nitride ceramic allow the tip to reach a high operating temperature with a minimum power applied across the electrical contacts. When the tip is at the highest operating temperature, the remainder of the structure remains relatively cool. In an embodiment, an additional component such as boron is added to the silicon carbon-nitride to increase the electrical conductivity of the micro-glow plug. In another embodiment, a plurality of micro-glow plugs are attached to a body wherein when the operational micro-glow plug fails, the next successive micro-glow plug receives power across its electrical contacts.

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